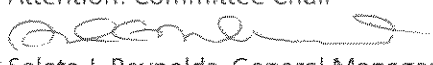


**CITY OF LOS ANGELES**  
INTER-DEPARTMENTAL MEMORANDUM

Date: January 15, 2019

To: Honorable City Council  
c/o City Clerk, Room 395  
Attention: Committee Chair

From:  for Seleta J. Reynolds, General Manager  
Department of Transportation

Subject: Vision Zero Implementation Strategy for the Safety of the Traveling Public - Fiscal Year 2019-20

**SUMMARY**

Council File 17-1137 directs the Los Angeles Department of Transportation (LADOT) to provide an overview of LADOT Vision Zero projects planned for the 2019-2020 Fiscal Year, contingent upon adoption of the Mayor's budget. This report covers LADOT planned work on Priority Corridors and Priority Intersections, the Street Reconstruction program, Caltrans coordination, community engagement, and project evaluation.

**RECOMMENDATION**

LADOT recommends the Los Angeles City Council receive and file this item.

**BACKGROUND**

CF17-1137 directs LADOT to report annually with a set of proposed Vision Zero projects for consideration by Council and for inclusion in the Mayor's proposed budget. Proposed projects must achieve the following objectives:

1. Prioritize Vision Zero projects by greatest impact.
2. Ensure the validity of the High Injury Network (HIN) and Priority Corridor data.
3. Base Vision Zero improvements on collision data.
4. Prioritize projects that address known threats to public safety, with consideration given to severity, vulnerability, social equity, and cost effectiveness.

In November 2018, LADOT submitted a report to Council proposing a new methodology for determining and prioritizing projects in line with these objectives. In December 2018, Council adopted the report, approving 20 additional Priority Corridors and 60 new Priority Intersections (see Attachments 2 and 3). The new Priority Locations supplement the 40 Priority Corridors identified by LADOT and adopted by City Council in 2017. Per Council direction, LADOT will prioritize its work at these locations by social equity indicators according to the Los Angeles Health and Equity Index.

## DISCUSSION

LADOT used a new methodology to identify additional Priority Corridors for 2019. The new methodology ranked all segments of HIN corridors based on the number of people who have been killed or seriously injured per mile across all modes, without any additional weighting for pedestrian or cyclist injuries or fatalities. This analysis excluded 2017 Priority Corridors so as not to duplicate Priority Corridor locations. LADOT analyzed the most recent five-year collision data (January 2013- December 2017) and identified the top 20 corridors on the High Injury Network that meet the following criteria:

- A minimum length of 0.5 miles
- A minimum average of 15 people killed or severely injured per mile (KSI/Mile)

Per council direction, LADOT will prioritize projects on the approved 2019 Priority Corridors and Intersections based on party vulnerability and social equity according to the Los Angeles Health and Equity Index.

Some of the city's most pressing safety challenges are in singular locations, and not along corridors. To address this, LADOT also analyzed all intersections in the city, regardless of whether they are on the HIN, to identify intersections with the highest levels of deaths and serious injuries. The Department continues to look at new strategies to target high-crash locations.

Consistent with work completed in 2017 and 2018, LADOT will install safety improvements at Priority Locations in three phases. Collision and traffic data will identify improvements that address the specific needs of a given corridor or intersection, and a community engagement strategy will help inform the suite of treatments installed in each phase. Phase 1 implementation includes low cost treatments, such as roadway re-striping, signs, and other lower cost measures. Some of these improvements, such as painted intersection tightenings or buffered bike lanes, are considered pilots of more permanent safety improvements. Phase 2 safety improvements include new or upgraded traffic signals that strengthen Phase 1 improvements. The City installs Phase 3 concrete treatments on streets to make improvements permanent and change the character of the street. The projects described below in Phases 1, 2, and 3 are contingent upon pending Fiscal Year 2020 budget requests. The quantity of work planned is intended to be ambitious, but achievable in the fiscal year, based on current and expected resources.

### Community Engagement

LADOT will launch a robust community engagement strategy around all 2019 Priority Locations and five 2017 Priority Corridors (see Attachments 1 and 2) to ensure context-sensitive safety improvements and that all members of the community are aware of a project's safety benefits and tradeoffs. LADOT will manage a team of Community-Based Organizations working together as regional leads to support this effort, beginning with a social-context analysis that will inform future engagement. Engagement activities will include youth canvassing, business engagement, social media outreach, mobile storytelling and comment collection, community-based events, and tactical urbanism. These activities will incorporate translation and interpretation services, childcare and transportation coordination, and accessibility. To gauge the success of its engagement efforts and positively iterate on the strategy, LADOT will conduct evaluations, before and after surveys, and focus groups. A new LADOT Vision Zero website, launching in 2019, will be an online hub for Vision Zero projects and allow LADOT to connect with communities and collect feedback around proposed projects and safety concerns outside of in-person engagement.

In the department's FY 2020 proposed budget, LADOT has requested an engagement coordinator (Transportation Planning Associate II) and an assistant engagement coordinator (Transportation Planning Associate I) to oversee LADOT's ongoing large-scale engagement efforts. LADOT has also requested a Vision Zero graphic designer (Graphics Designer II) to create all outreach materials in-house, including project boards, flyers, door-hangers, fact sheets, photo simulations of planned improvements, infographics, community curriculum, maps for walk audits, and more. If funded, LADOT expects these positions to reduce our reliance on consultant services and realize cost savings for future budget cycles.

### **Phase 1**

LADOT will initiate design on the twenty 2019 Priority Corridors in January 2019. In FY 2020, LADOT will continue to implement Phase 1 improvements on five 2017 Priority Corridors (Attachment 1) and begin implementation on the twenty 2019 Priority Corridors (Attachment 2). In total, this amounts to approximately 36 miles of new striping and signs in FY 2020. LADOT will also install Speed Feedback Signs on the 2019 Priority Corridors.

LADOT will take a similar Phase 1 approach to the Priority Intersections (Attachment 3). Phase 1 intersection safety treatments may include new crosswalks, crosswalk upgrades, interim intersection tightenings, adjustments to turn pockets or lane widths, new signage, and adjustments to signal timing and operation. Vision Zero safety improvements and their ability to reduce crashes are described in detail in LADOT's Safety Toolkit, attached hereto (Attachment 4).

### **Phase 2**

LADOT plans to design and install Pedestrian Activated Yellow Flashing Beacons (PAYFB), Rectangular Rapid Flashing Beacons (RRFBs), and/or High-intensity Activated crossWalk beacons (HAWKs) at 20 locations on Priority Corridors (2017 and 2019). Beacons increase the rate at which vehicles yield to pedestrians in a crosswalk by up to 97%. In addition to these pedestrian signals, LADOT will design and begin installation of 100 new signals and signal upgrades on Priority Corridors, at Priority Intersections, and other high-crash locations throughout the City. New traffic signals have been shown to reduce crashes by up to 25% and protected left turns, a common signal upgrade, have been shown to reduce left-turn crashes by as much as 99%. LADOT will also install Leading Pedestrian Intervals (LPI) on 2019 Priority Corridors where appropriate. LPIs reduce crashes between turning vehicles and pedestrians in crosswalks by up to 60%.

### **Phase 3**

Partnering with the Bureau of Engineering (BOE) for design, and the Bureau of Street Services (BSS) for construction, LADOT plans to implement 20 new pedestrian refuge islands in order to improve pedestrian safety. Pedestrian refuge islands have been shown to reduce crashes by an average of 46% at marked crossings. With additional resources requested for the FY 2020 budget, LADOT plans to design 40 curb extensions at strategic locations along Priority Corridors. Concrete curb extensions reduce crashes by 30% by encouraging slower and more careful vehicle turn movements and enhancing pedestrian visibility.

**Street Reconstruction Program**

The City's Street Reconstruction Program aims to combine street reconstruction, sidewalk repair, curb ramp upgrades, green street treatments, street lighting enhancements, and Vision Zero improvements into singular complete street projects. With this program, the City can accomplish Phase 1, 2, and 3 improvements for select streets to deliver transformative safety projects.

In FY 2020, work will continue on the first set of Street Reconstruction projects including Venice Blvd, Main St, Reseda Blvd, and Avalon Blvd (Attachment 5). A forthcoming report will put forth a list of proposed streets for the reconstruction program for Council consideration. 2019 Priority Corridors with poor pavement quality are eligible for this program. LADOT will engage communities around the design of safety improvements for a second set of streets.

Work completed with the Street Reconstruction Program ensures that streets and sidewalks for each of the project corridors will be brought to a state of good repair. Repaired sidewalks, curbs, and gutters, as well as modernized access ramps will improve access along these corridors. Bike lane facilities, where installed, will be installed on newly paved roads.

**Caltrans Coordination**

LADOT will coordinate with Caltrans to improve safety on the three 2019 Priority Corridors within state control and eight (8) Priority Intersections where LADOT shares jurisdiction with Caltrans (Attachment 6). A forthcoming report to Council will expand on the nature of this coordination.

**Evaluation**

Recent staff hiring has allowed for more standardization of evaluation protocol and more robust guidelines for the evaluation of projects. LADOT has submitted a budget request for additional staffing to support evaluation. With an additional Data Analyst and Geographic Information System Specialist, LADOT will conduct evaluation of the efficacy of individual treatments and completed projects in order to inform future projects.

**FINANCIAL IMPACT**

This memorandum does not request additional funds for implementation of these projects. LADOT has submitted budget requests to address work on the new Priority Corridors and Intersections for the City's upcoming 2019-20 budget process.

Attachments

**Attachment 1 - 2017 Priority Corridors Projects To Be Developed in FY 2020**

<b>#</b>	<b>2019 Priority Corridor</b>	<b>From Street</b>	<b>To Street</b>	<b>Length (Miles)</b>	<b>Council District</b>
1	ADAMS BLVD	Fairfax Ave	Crenshaw Blvd	1.6	10
2	CENTRAL AVE	Jefferson Blvd	17th St	1.4	9, 14
3	FLETCHER DR	Riverside Dr	San Fernando Rd	0.8	13
4	N FIGUEROA ST	Ave 43	York Blvd	2.1	1
5	SEPULVEDA BLVD	Nordhoff St	Rinaldi St	3.0	7

## Attachment 2 - 2019 Priority Corridors within City of Los Angeles Jurisdiction

#	2019 Priority Corridor	From Street	To Street	Length (Miles)	Council District
1	IMPERIAL	ATHENS WAY	VERMONT AVE	0.76	8
2	LA BREA	ADAMS BLVD	COLISEUM ST	1.04	10
3	NORMANDIE	LOMITA BLVD	PACIFIC COAST FWY	0.54	15
4	HIGHLAND	FRANKLIN PL	SANTA MONICA BLVD	0.93	4,13
5	WOODMAN	SHERMAN WAY	SATICOY ST	0.57	2,6
6	GAFFEY	14TH ST	O'FARRELL ST	1.03	15
7	MANCHESTER	MCKINLEY PL	VERMONT AVE	1.78	8,9
8	WESTERN	LEXINGTON AVE	RUSSELL AVE	0.75	13
9	BEVERLY	NORMANDIE PL	WESTMORELAND BLVD	0.76	13
10	VERMONT	GAGE ST	79TH ST	1	8
11	WESTERN	3RD ST	WASHINGTON BLVD	2	4,10
12	HOLLYWOOD	FULLER AVE	LYMAN PL	3.61	4,13
13	LA CIENEGA	GUTHRIE AVE	WHITWORTH DR	1.16	5,10
14	SUNSET	L. RON HUBBARD WAY	SELMA AVE	4.17	4,13
15	VICTORY	FULTON AVE	WHITSETT AVE	0.99	2
16	NORMANDIE	BEVERLY BLVD	MELROSE AVE	0.5	13
17	PICO	2ND AVE	WESTERN AVE	0.57	10
18	CULVER	CENTINELA AVE	SLAUSON AVE	0.63	11
19	VERMONT	7TH ST	BEVERLY BLVD	1.14	10,13
20	VENTURA	GARDEN GROVE AVE	WHITE OAK AVE	0.64	3,4

**Attachment 3 - 2019 Priority Intersections**

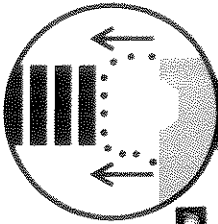
<b>Rank</b>	<b>Intersection</b>	<b>Council District</b>
1	Pacific Coast Hwy & Temescal Canyon Rd	11
2	Gaffey St & Westmont Dr	15
3	Roscoe Blvd & Winnetka Ave	3
4	Vernon Ave & Central Ave	9
5	Vista Del Mar & Imperial Hwy	11
6	Hollywood Blvd & Western Ave	13
7	Tampa Ave & Roscoe Blvd	3
8	Burbank Blvd & Woodley Ave	6
9	Manchester Ave & Vermont Ave	8
10	La Brea Ave & Adams Blvd	10
11	Victory Blvd & Coldwater Canyon Ave	2
12	Florence Ave & Hoover St	8
13	Olympic Blvd & Orme Ave	14
14	Pacific Coast Hwy & Figueroa Pl	15
15	Sherman Way & Hayvenhurst Ave	6
16	Sunset Blvd & Fairfax Ave	4
17	Victory Blvd & Wilbur Ave	3
18	Victory Blvd & Reseda Blvd	3
19	Lincoln Blvd & Washington Blvd	11
20	Sepulveda Blvd & Century Blvd	11
21	Foothill Blvd & Balboa Blvd	12
22	Wilshire Blvd & Western Ave	10

23	Culver Blvd & Slauson Ave	11
24	Burbank Blvd & Hayvenhurst Ave	6
25	Nordhoff St & Woodley Ave	12
26	Lassen St & Winnetka Ave	12
27	Parthenia St & Woodley Ave	12
28	Van Nuys Blvd & Woodman Ave	6
29	Highland Ave & Pat Moore Way	4
30	Adams Blvd & Buckingham Rd	10
31	Devonshire St & Balboa Blvd	12
32	Pacific Coast Hwy & Normandie Ave	15
33	Pacific Ave & Rose Ave	11
34	Crenshaw Blvd & Washington Blvd	10
35	La Brea Ave & Rodeo Rd	10
36	Valley Circle Blvd & Victory Blvd	3
37	Seaside Ave & Navy Way	15
38	Mission Rd & Valley Blvd	1
39	Pacific Coast Hwy & Vermont Ave	15
40	Culver Blvd & Jefferson Blvd	11
41	Sepulveda Blvd & Parthenia St	6
42	Sherman Way & Bellaire Ave	2
43	Imperial Hwy & Figueroa St	8
44	Arlington Ave & Martin Luther King Jr Blvd	8
45	Washington Blvd & Ocean Ave	11
46	Nordhoff St & Balboa Blvd	12
47	Manchester Ave & Broadway	8
48	Roscoe Blvd & Reseda Blvd	12

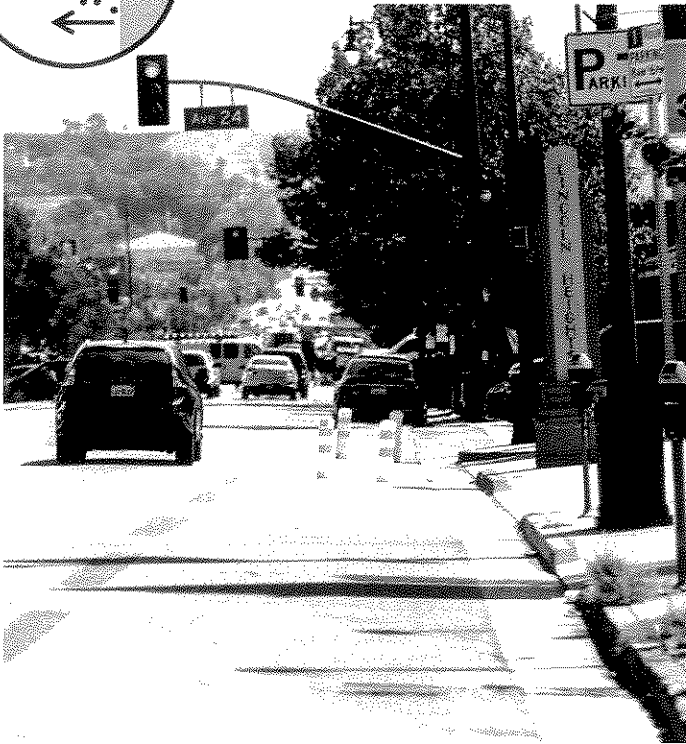


49	Florence Ave & Avalon Blvd	9
50	Topanga Canyon Blvd & Parthenia St	12
51	Carson St & Normandie Ave	15
52	Sherman Way & Woodman Ave	2
53	Lankershim Blvd & Oxnard St	2
54	Central Ave & Imperial Hwy	15
55	La Brea Ave & Washington Blvd	10
56	Pacific Coast Hwy & Sunset Blvd	11
57	Manchester Ave & Figueroa St	8
58	Gage Ave & Broadway	9
59	Sunset Blvd & Highland Ave	13
60	La Cienega Blvd & Olympic Blvd	5

**Attachment 4 - Safety Toolkit**



## Interim Intersection Tightening



### What is an interim intersection tightening?

- » Uses temporary materials like paint, plastic bollards, and reflective markers to visually and physically narrow the street at intersections.

### What are its purpose and benefits?

- » Creates a shorter crossing for people walking with reduced exposure to traffic.<sup>1</sup>
- » Slows vehicles approaching intersections<sup>3</sup> and encourages slower and more careful turns.
- » Provides more space between people walking and people driving.

### Where should this safety tool be applied?

- » Intersections where there are crash patterns involving turning vehicles and people walking.
- » Intersections between major streets and neighborhood streets to indicate to people driving that they are transitioning to a slower speed street.<sup>1</sup>

### What else should I know about interim intersection tightenings?

- » Can only be installed where full-time on-street parking or excess street width exists.

### Costs



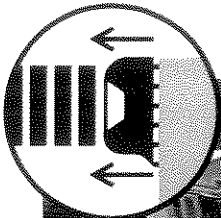
### Timeframe



### Effectiveness



**Notes:** 1. *Curb Extensions*. National Association of City Transportation Officials. 2. Oregon Dept. of Transportation Research Unit. 3. *Curb Extensions*. Pedestrian and Bicycle Information Center.



## Curb Extension



### What is a curb extension?

- » A curb extension permanently widens an existing sidewalk using concrete at intersections or midway along a street. It may include planting, street furniture, or serve as a bus stop.

### What are its purpose and benefits?

- » Visually and physically narrows the street to create a shorter crossing for people walking.
- » Increases the visibility of people walking. One study showed that people driving more frequently yielded to people walking, which reduced the potential for crashes between people walking and people driving.<sup>2</sup>
- » Slows vehicles approaching intersections<sup>3</sup> and encourages slower and more careful turns.
- » Provides more space between people walking and people driving.
- » Increases available space for amenities like street furniture, benches, planting, and street trees.<sup>1</sup>

### Where should this safety tool be applied?

- » Intersections where there are crash patterns involving turning vehicles and people walking.
- » Midblock locations, also known as “chokers”
- » Intersections between major streets and neighborhood streets to indicate to people driving that they are transitioning to a slower speed street.<sup>1</sup>
- » Bus stops, also known as bus bulbs.<sup>1</sup> Bus bulbs allow the bus to stop while still in the travel lane, improving route efficiency.

### What else should I know about curb extensions?

- » May involve the loss of parking and may be expensive if it requires utility relocation or accommodations need to be made for water drainage.
- » Can only be installed where full-time on-street parking or excess street width exists.

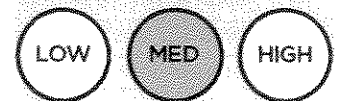
### Costs



### Timeframe



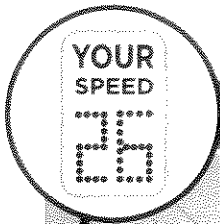
### Effectiveness



# 30%

**CRASH REDUCTION FACTOR**  
Curb Extensions have been shown to reduce crashes by 30%.<sup>4</sup>

Notes: 1. Curb Extensions. National Association of City Transportation Officials. 2. Oregon Department of Transportation, Research Unit. 3. Curb Extensions. Pedestrian and Bicycle Information Center. 4. Intersection Crash Reduction Factors. Michigan Department of Transportation.



## Speed Feedback Sign



### What is a speed feedback sign?

» Uses radar technology to determine the speed of an approaching vehicle and then displays that speed to the person driving via a digital sign.<sup>1</sup>

### What are its purpose and benefits?

- » Curbs unsafe speeding by offering people driving a real-time check on whether they are speeding.
- » People driving have been shown to decrease unsafe speed when they see how fast they are going.<sup>2</sup>
- » By encouraging slower driving, speed feedback signs help reduce crashes and crash severity.<sup>1</sup>

### Where can this safety tool be applied?

- » Where unsafe speeding is a problem and/or there is a pattern of crashes along the corridor.<sup>1</sup>
- » In School Zones.

### What else should I know about speed feedback signs?

- » Most effective if a speed feedback sign is installed with a speed limit sign.<sup>1</sup> This allows the person driving to compare their speed with the posted speed limit.
- » Speed feedback signs are not a substitute for other safety improvements.<sup>3</sup> They are best when included as part of a suite of other improvements to address unsafe speeding.

**Notes:** 1. *Install a Dynamic Speed Feedback Sign*. Institute of Transportation Engineers. 2. *A Desktop Reference of Potential Effectiveness in Reducing Speed*. Federal Highway Administration. 3. *Pedestrian Facilities Users Guide*. Federal Highway Administration.

### Costs



### Timeframe



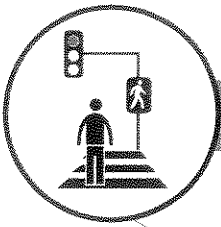
### Effectiveness



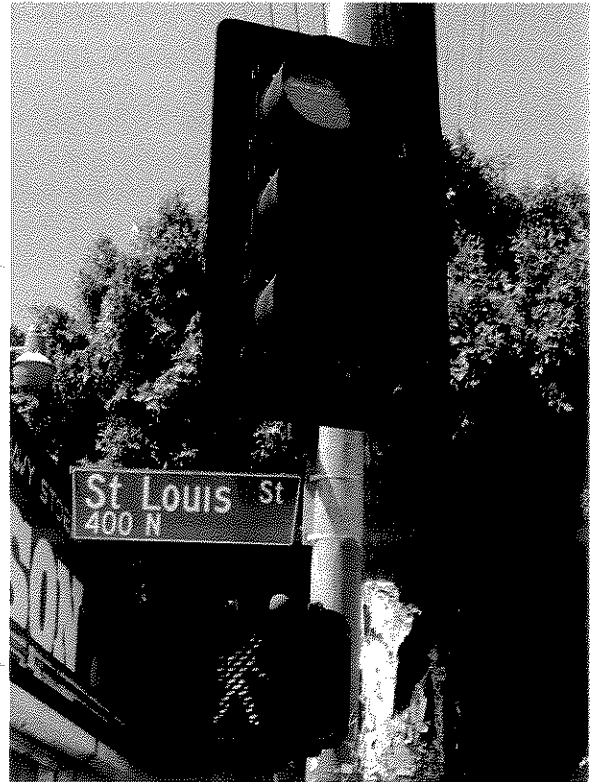
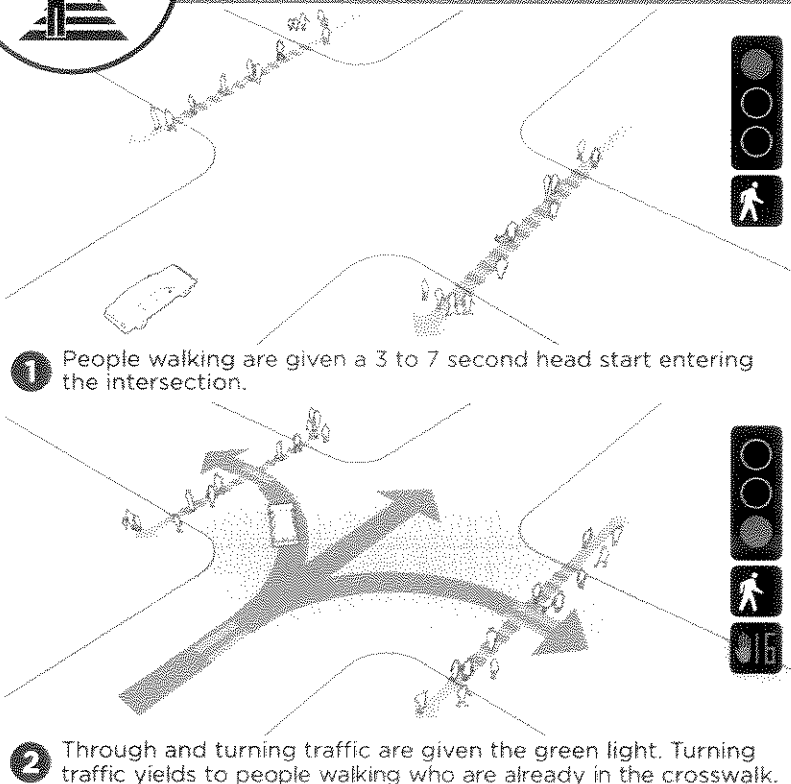
**-5 Miles Per Hour**

### AVG. SPEED REDUCTION

Speed Feedback Signs have been shown to reduce vehicle speeds by an average of five miles per hour.<sup>2</sup>



## Leading Pedestrian Interval



### What is a leading pedestrian interval?

- >> Gives people walking a 3 to 7 second head start when crossing the street. The walk signal displays first to allow people walking to enter the intersection before cars traveling in the same direction. Cars get a green light after this head start period.<sup>1</sup>

### What are its purpose and benefits?

- >> Increases the likelihood that turning drivers will yield to people walking.<sup>2</sup>
- >> Enhances safety for people walking who may be slower to start into the intersection, such as the elderly and disabled.<sup>2</sup>

### Where can this safety tool be applied?

- >> At intersections with heavy foot traffic and a high volume of turning vehicles where turning traffic comes into conflict with people walking in the crosswalk.<sup>1</sup>

### What else should I know about leading pedestrian intervals?

- >> May require adjustments to existing signal timing and/or require additional hardware to retrofit older signals.

### Costs



### Timeframe



### Effectiveness

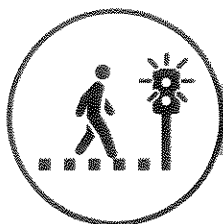


# 60%

### CRASH REDUCTION FACTOR

Leading Pedestrian Interval has been shown to reduce crashes by as much as 60%.<sup>2</sup>

Notes: 1. Leading Pedestrian Interval. National Association of City Transportation Officials. 2. Proven Safety Countermeasures: Leading Pedestrian Intervals. Federal Highway Administration.



## Pedestrian-Activated Flashing Beacon



### What is a pedestrian-activated flashing beacon?

- » Pedestrian-activated flashing beacons are button-activated amber LED lights that use an irregular flashing pattern that is similar to emergency flashers on police vehicles.<sup>1</sup> The device is unlit when not in use. People waiting to cross the street must push the button for the lights to activate.
- » Lights alert people driving to the presence of a person in the crosswalk.

### What are its purpose and benefits?

- » People driving are more likely to yield to people crossing in a marked crosswalk coupled with a pedestrian-activated flashing beacon.<sup>1</sup>

### Where should this safety tool be applied?

- » At marked crosswalks where driver speed, vehicle volume, and/or the number of lanes lead people driving to miss or ignore people crossing the street on foot.
- » Locations may also be characterized by:
  - » A crash history or observed conflicts between people driving and people crossing.<sup>2</sup>
  - » High volume of people crossing.<sup>2</sup>

### What else should I know about pedestrian-activated flashing beacons?

- » Most effective when used with accessible curb ramps to the sidewalk, advance warning signs and pavement markings, and overhead street lighting.<sup>2</sup>
- » Not used in conjunction with any other traffic control device such as a stop or yield sign, traffic signal, or roundabout.<sup>2</sup>
- » Pedestrian-activated flashing beacons may look somewhat different from one another depending on the existing street design and infrastructure.

### Costs



### Timeframe



### Effectiveness



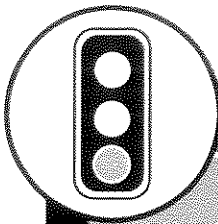
# 81%

### YIELDING RATE

Pedestrian-activated flashing beacons have been shown to increase yielding behavior between 18% and 81%.<sup>1</sup>

**Notes:** 1. Rectangular Rapid Flash Beacon (RRFB). Federal Highway Administration. 2. Unsignalized Intersection Improvement Guide: Install a Rectangular Rapid-Flashing Beacon (RRFB). Institute of Transportation Engineers. 3. Rectangular Rapid Flash Beacon (RRFB). PEDSAFE.





## New Traffic Signal



### What is a new traffic signal?

- » A traffic signal is the red-yellow-green intersection control device that tells people walking, biking, and driving when to go and when to stop. Often they are referred to as traffic lights or stop lights. A new traffic signal transforms an existing intersection that is either uncontrolled or controlled by stop signs into a fully signalized intersection.

### What are its purpose and benefits?

- » Reduces conflicts and confusion at intersections for all users and provides people walking with dedicated crossing opportunities.
- » Safely manage high volumes of traffic at intersections.
- » Reduces the frequency and severity of certain types of crashes, especially right-angle crashes (crashes resulting from an oncoming vehicle "t-boning" a turning vehicle).<sup>1</sup>
- » Stops heavy traffic at certain periods to permit people to cross.<sup>1</sup>
- » Provides order at intersections with a high number of conflicts between people walking, biking, and driving.

### Where should this safety tool be used?

- » At busy intersections with a high volume of vehicle and/or foot traffic in all directions.<sup>1</sup>
- » At intersections with a high number of right angle crashes.<sup>1</sup>

### What else should I know about new traffic signals?

- » Requires a detailed engineering study that includes evaluation of crash history and traffic flow.

**Notes:** 1. *Highway Traffic Signals*. Manual on Uniform Traffic Control Devices. 2. *Desktop Reference for Crash Reduction Factors*. Federal Highway Administration.

### Costs



### Timeframe



### Effectiveness

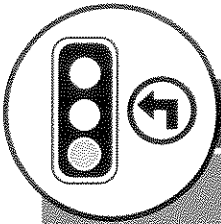


# 25%

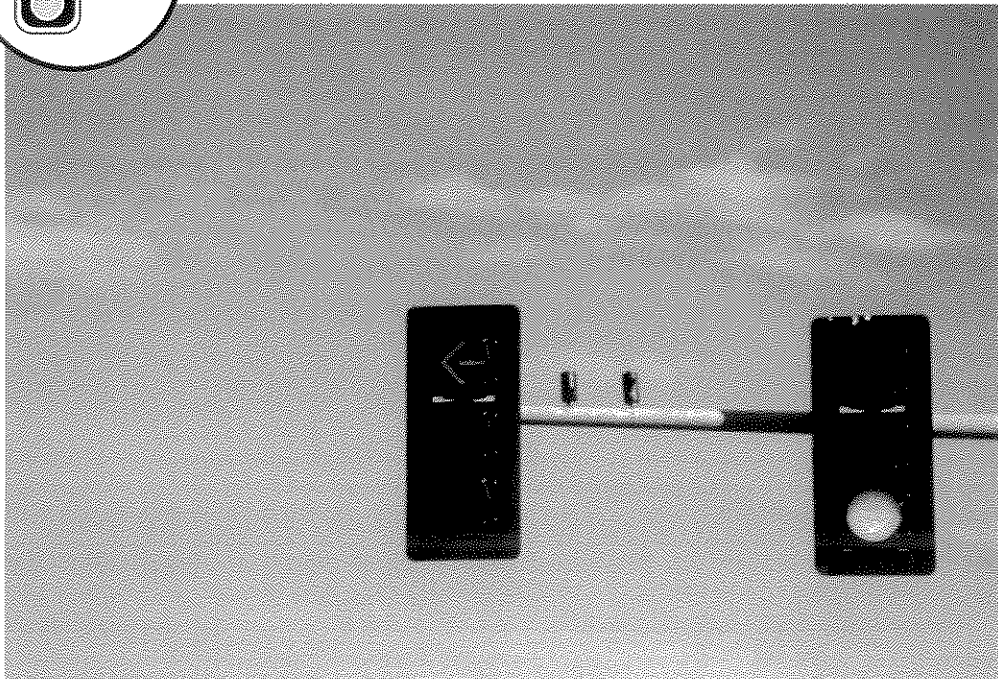
### CRASH REDUCTION FACTOR

New Traffic Signals have been shown to reduce crashes by as much as 25%.<sup>2</sup>





## Protected Left Turn



### Costs

LOW

MED

HIGH

### Timeframe

SHORT

MED

LONG

### Effectiveness

LOW

MED

HIGH

# 99%

### CRASH REDUCTION FACTOR

Protected left-turns have been shown to reduce left-turn crashes by 99%.<sup>3</sup>

### What is a protected turn?

>> A dedicated left turn signal (AKA a left-turn arrow). It provides people turning left with an exclusive opportunity to turn while opposing traffic and pedestrians are stopped, resulting in a significant reduction in conflicts among people driving and walking.

### What are its purpose and benefits?

- >> One of the most common conflicts at intersections with traffic signals is the competition between vehicles turning left and people walking in the crosswalk. Without a green arrow, people driving must yield to oncoming traffic, to make their left turn. When doing so, they typically focus on on-coming traffic to look for gaps and may not pay due attention to people walking in the crosswalk.<sup>1</sup>
- >> It virtually eliminates crashes involving left-turning traffic for the affected intersection/direction.

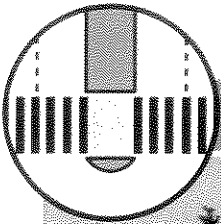
### Where should this safety tool be used?

- >> Where there are conflicts between left turning traffic, opposing traffic, and people walking.<sup>2</sup>
- >> At intersections with limited sight distance - where people driving can't see oncoming traffic for a long enough period to judge if they'll have enough time to make the turn.<sup>2</sup>

### What else should I know about protected left turns?

- >> May result in increased waiting time at the signal for all directions and movements.<sup>1</sup>
- >> Requires an existing left-turn pocket (aka left turn lane).

Notes: 1. *Left Turn Phasing*. PEDSAFE. 2. *Evaluating Intersection Improvements: An Engineering Study Guide*. National Cooperative Highway Research Program. 3. *Desktop Reference for Crash Reduction Factors*. Federal Highway Administration.



## Pedestrian Refuge Island



### What is a pedestrian refuge island?

- » A concrete median designed for a person walking across a street to pause between directions of traffic with protection from moving vehicles.

### What are its purpose and benefits?

- » Allows people walking to cross only one direction of traffic at a time.<sup>1</sup>
- » Reduces the distance in which people crossing are exposed to traffic.
- » Gives people a place to stand in the middle of wide crossings.<sup>2</sup>

### Where should this safety tool be applied?

- » Recommended where people walking must cross at least two lanes of traffic in one direction (on a 1-way or 2-way street), but may be implemented on smaller streets where space permits.<sup>2</sup>
- » At uncontrolled marked crosswalks (no traffic signals or stop signs to control crossing traffic).
- » Near transit stops or other sites with large volumes of people walking.<sup>3</sup>
- » Areas with crash history or observed conflicts between people driving and walking.<sup>4</sup>

### What else should I know about pedestrian refuge islands?

- » Can only be installed on a street where there is sufficient space, such as a center left turn lane or painted island.
- » May require elimination of an existing left-turn lane or modification of existing medians.

### Costs



### Timeframe



### Effectiveness



# 46%

### CRASH REDUCTION FACTOR

Pedestrian Refuge Islands have been shown to reduce crashes by an average of 46% at marked crossings.<sup>5</sup>

Notes: 1. Crossing Islands. Pedestrian and Bicycle Information Center. 2. National Association of City Transportation Officials. 3. Unsignalized Intersection Improvement Guide: Provide a Pedestrians Refuge Island. Institute of Transportation Engineers. 4. Proven Safety Countermeasures: Medians and Pedestrian Crossing Islands in Urban and Suburban Areas. Federal Highway Administration. 5. Desktop reference for crash reduction factors. Federal Highway Administration.

**Attachment 5 - 2017 Reconstruction Corridors Continuing Work in FY 2020**

#	2017 Priority Corridor	From Street	To Street	Length (Miles)	Council District
1	AVALON BLVD	Jefferson Blvd	120th St	6.3	8, 9, 15
2	MAIN ST (SOUTH)	MLK Blvd	Imperial Hwy	5.5	8, 9
3	RESEDA BLVD	Parthenia St	Victory Blvd	2.9	3, 12
4	VENICE BLVD (EAST)	Arlington Ave	Figueroa St	2.8	1, 9, 10

**Attachment 6 - 2019 Priority Corridors and Intersections Requiring Caltrans Coordination**

#	Priority Corridor Name	From Street	To Street	Length (Miles)	Council District
1	LINCOLN	COMMONWEALTH AVE	VENICE BLVD	1.12	11
2	LINCOLN	BLUFF TRAIL ROAD	MANCHESTER AVE	0.51	11
3	SANTA MONICA	BROCKTON AVE	SEPULVEDA BLVD	1.09	5,11

Rank	Intersection	Council District
1	Pacific Coast Hwy & Temescal Canyon Rd	11
2	Pacific Coast Hwy & Figueroa Pl	15
3	Lincoln Blvd & Washington Blvd	11
4	Sepulveda Blvd & Century Blvd	11
5	Pacific Coast Hwy & Normandie Ave	15
6	Pacific Coast Hwy & Vermont Ave	15
7	Topanga Canyon Blvd & Parthenia St	12
8	Pacific Coast Hwy & Sunset Blvd	11